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The relative importance of social and institutional conditions in the planning of wind power projects

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Abstract

Governments around the world try to stimulate the development and use of renewable energy technologies, like wind energy. While wind turbines are increasingly being implemented, however, a lack of social acceptance at the local level remains an important challenge for developers of wind power plants. This article aims to explore the relative importance of social and institutional conditions and their interdependencies in the operational process of planning wind power schemes. The article not only focuses on how negative local social conditions can frustrate public policy (cf. NIMBY syndrome), but also on how positive local social conditions can compensate for a negative public policy framework. We analyzed the cases of implementing wind power of two actors (the regional energy distributor and small private investors) in the municipality of Zeewolde, the Netherlands. Both cases illustrate that the formal institutional framework (formal rules, procedures and instruments) is neutral in a certain sense. Social conditions – management styles, interests and informal contacts – put meaning in this framework. The way stakeholders deal with the prevailing institutional structure clarifies social acceptance and therewith implementation.

Keywords: Wind power implementation; Social acceptance; Social and institutional conditions; Netherlands

Contents

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1. Introduction

Governments around the world try to stimulate the development and use of renewable energy technologies and have implemented support schemes aiming at facilitating market formation. Recently, the European Council has set a new binding goal of 20% for renewable energy sources by 2020 [1]. As a major 'near-market' technology, wind energy is expected to account for the bulk of this target in a number of EU member states [2]. While wind turbines are increasingly being implemented, however, a lack of social acceptance at the local level still is an important challenge for developers of wind power plants. Planning problems – securing sites and permits – and especially the role in this of social acceptance are conceived to be main challenges for wind power implementation and turn out to be important constraining factors in achieving the wind power targets in several countries, such as the UK, the Netherlands and France [2–7].

This article aims to explore the relative importance of social and institutional conditions in the operational process of planning wind power schemes. Most studies solely focus on the emergence and causes of planning problems and local social resistance and on the role in this of formal public policy trends [5,6]. The opposite effect, the capacity of local social conditions to compensate for a negative public policy framework remains somewhat under explored. We take a complementary view by analyzing the interdependent nature and relative importance of social and institutional conditions at different levels of government with a view to illustrate how local social conditions can neutralize the effect of a formal public policy framework. We compared the performance of two important entrepreneurial groups in the Netherlands – energy distributors and small private investors – within the same local administrative context. Central in the analyses are the institutional regulatory dimension (the public policy framework) and the social context as explanatory variables for either the acceptance or the rejection of concrete wind power schemes.

1.1. Existing studies on social acceptance of wind power

Socio-political acceptance (acceptance of a technology by politics, policy makers, key stakeholders and the public) as well as community acceptance (acceptance by local stakeholders) are increasingly conceived to be important for the realization of specific wind power projects and wind power market development [7]. Socio political acceptance by key stakeholders and policy makers of a particular policy framework, i.e. a reliable financial incentive system or a specific spatial planning program, determines opportunities for different types of wind power entrepreneurs and thus market development. At the local level, a lack of community acceptance or opposition to wind turbine siting has often been explained by the Not-In-My-Backyard (NIMBY) syndrome, meaning that people are in favor of wind power in general but are opposed to wind turbines in their own area [8,9]. The explanatory validity of 'Nimbyism' has been refuted however in a number of studies [10–12].

Bell et al. [3] explored different explanations for the gap between high levels of public support for wind power in general and the low success rate for planning applications. They identified three different explanations for this so called 'social gap'. The first is the previously mentioned NIMBY phenomenon. The second explanation is the 'democratic deficit' of the planning system, meaning that a small minority who are opposed to wind power are able to obstruct the majority of the projects. The so-called 'qualified support for wind power' is the third explanation. Qualified support for wind power means that the general support for wind power is dependent on some narrowly defined criteria, such as qualifications regarding the impressions of the impact of developments on the landscape, the environment, animals (e.g. birds) and humans. These criteria are often not met in concrete planning applications [13, pp. 20–21].

Conflicts between (foreign) investors and local residents about costs and benefits have also been put forward as grounds for lagging implementation [14–16]. This latter notion about financial benefit is part of explanatory factors such as ownership of the wind energy park (corporate versus local ownership), ownership of the rented territory and financial participation in the project. Financial benefit and public participation in the planning process appear to enhance support for wind schemes locally [5,17]. These factors refer to different types of justice: distributive justice and procedural justice. Distributive justice focuses on the equitable distribution of outcomes. Procedural justice, in contrast, is concerned with the fairness of decision-making processes [18]. Gross [18] found that appropriate participation, i.e., the ability of voice to be heard, adequate information, being treated with respect, and unbiased decision-making are important for the successful implementation of wind energy.

1.2. Conceptual framework

The relative importance of social and institutional conditions in the operational process of realizing wind power projects is analyzed using the implementation capacity concept (IC). This concept is defined as the capacity of wind power entrepreneurs to implement wind turbines. We assume that the IC is determined by the sum of the relevant economic, technical, institutional and social conditions and mutual interdependencies. These conditions affect the decisions made by wind cooperatives on investments in wind power and

determine the opportunities for this entrepreneurial group to actually implement wind power projects. Every type of condition is necessary but not in itself sufficient for implementation [13]. To analyze (changes in) implementation capacity, our research specifically focused on two groups of conditions and their interdependencies.

The first group of conditions is the group of institutional conditions: explicit formalized policies and rules on different government levels, imposed on all stakeholders by top-down decision-making procedures, such as the Electricity Act (EA), the Spatial Planning Act (SPA), National Environmental Policy Plans (NEPP) and spatial planning and permitting procedures. Enforcement is foreseen by a formal sanction system that makes the imposed rules of the game operational. The framework of institutional conditions that is relevant for the wind power market encompasses four policy fields: energy policy and law, land use policy and law, environmental policy and law, and nature conservation policy and law.

The second group of conditions is the group of social conditions: the ways in which different stakeholders deal with prevailing institutional conditions. Social conditions are actions of, and cooperation or competition between, a variety of stakeholders involved (wind power entrepreneurs, government authorities, landowners, environmental organizations and local residents).

Third, our research focuses on the interdependencies between these institutional and social conditions. We focused on changes in institutional conditions and on the consequences of these changes for behavior of stakeholders and the possibility to implement wind turbines.

1.3. Multiple cases method

Our analysis is based on a multiple case study on the performance over time of two entrepreneurial groups in the Netherlands—energy distributors and small private investors within the same local administrative context. Energy distributors and small private investors have dominated the wind power market in the Netherlands over the last 15 years.

For energy distributors, we analyzed the local performance in the municipality of Zeewolde in the province of Flevoland. Zeewolde hosts a large-scale wind power project, owned by the regional energy distributor. We selected this project because such a large-scale application is representative for energy distributors. The selection of the same local administrative context for small private investors enabled us to compare the performances of the energy distributor and small private investors in exactly the same social and institutional setting. Moreover, the province of Flevoland is a revealing case. This province currently accounts for some 40% of the total national wind power, most of it realized by small private investors. The relatively rapid growth and the extent to which farmers came to dominate the wind power supply market in Flevoland are out of line with national developments. Understanding the conditions that influenced these atypical developments gives us a clear opportunity to learn about opportunities and bottlenecks at the operational level of implementation in general. The municipality of Zeewolde is an appropriate choice because the pattern of wind power implementation in this municipality resembles the pattern in the development of wind power in Flevoland as a whole [13, pp. 38–39].

The analyses are based on interviews with key-stakeholders on the Dutch wind power market, including, civil servants at provincial and municipal levels, wind power entrepreneurs, representatives of umbrella associations of wind turbine owners and citizen groups and renewable energy consultants. Besides the interviews, a variety of written materials were analyzed. We consulted scientific articles, legislation, policy documents on (renewable) energy, the environment and spatial planning, press releases and web sites. In addition we were able to use the personal archives of civil servants involved in the processes analyzed. Sections 3 and 4 provide an overview of constituent (local) social and institutional conditions of the implementation capacity for, respectively, the energy distributors and small private investors. Based on these overviews, the interdependent nature and the relative importance of social and institutional conditions in the operational process of implementation are illustrated and analyzed.

The article is organized as follows. The next section provides some background information on the development of the wind power market in the Netherlands. After that, the cases are presented in Sections 3 and 4. Finally in Section 5 we will reflect on the main findings with regard to the interdependent nature and relative importance of social and institutional conditions and on explanations provided by existing studies on social acceptance of wind power.

2. Development of the wind power market in the Netherlands

In analyzing the recent history of Dutch wind power, we showed that the shaping of policies and planning of the electricity sector at the national level has affected the development of the wind power supply market. New wind power entrepreneurs emerged and shifts occurred in market shares of different entrepreneurial groups. Four different types of entrepreneurs own the total capacity installed in the Netherlands [19, pp. 1029–1030, 20]:

- *Small private investors* (*mainly farmers*): this entrepreneurial group consists of farmers, other companies and sometimes individuals. Wind power exploitation is supplementary income for this entrepreneurial group. Their core business lies outside the energy sector.
- *Electricity sector* (*energy distributors*): this entrepreneurial group consists of companies that belong to the traditional energy sector. Wind power exploitation is a small business component in these companies. Their core business is producing and selling portfolio of (renewable) energy sources.
- *Wind cooperatives*: this entrepreneurial group consists of cooperatives that are owned by individual members. Wind power exploitation is not a means of making money, but a device to use in working for a sustainable society.

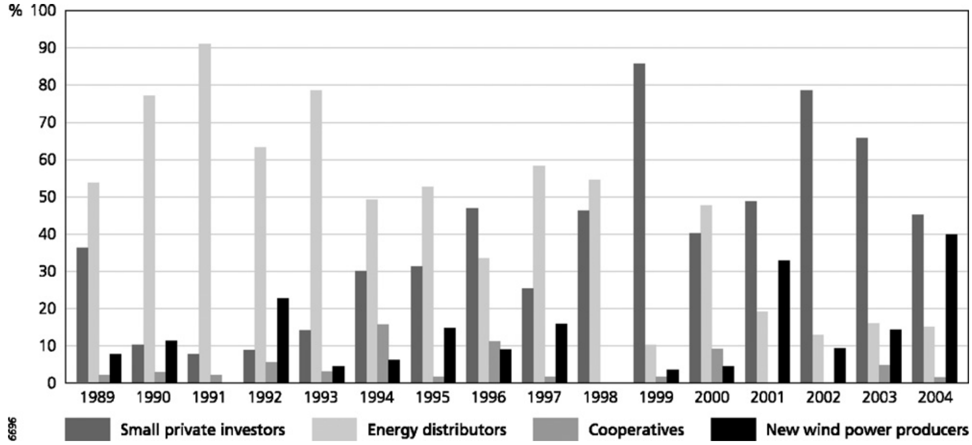


Fig. 1. Contribution to wind turbine capacity installed per year (%) [13, p. 61].

- *New independent wind power producers* (*NIWPs*): this entrepreneurial group consists of companies, commercially interested and specialized in wind power exploitation. Wind power exploitation is a part of their core business, which is most likely related to the renewable energy sector.

Each of these entrepreneurial groups has been active since the end of the 1980s, but they followed very different development paths and performed differently throughout the years (Fig. 1).

At the beginning of the 1990s, a lengthy tradition of interrelatedness between the Ministry of Economic Affairs and the state-owned electricity sector (energy distributors) set the tone in electricity policy developments and added to the implementation capacity for this entrepreneurial group. The wind power market was not freely accessible and energy distributors dominated in terms of total capacity installed annually. In this context the central government addressed energy distributors with a collaborative approach applying voluntary agreements, such as the Environmental Action Plan covenant (MAP) and the Governmental Agreement on Planning Problems Wind Energy.[1] These covenants contained renewable electricity targets for each province, which – in line with the monopolistic market structure – were to be met by energy distributors: Both central and provincial authorities focused on large-scale wind power applications and tended to cooperate with regional energy distributors.

The monopolistic situation changed with the liberalization process that started in 1998 and that led to a better bargaining position of private wind power producers. As a consequence, the wind power market started to show a relatively large number of new entrants and increased competition at the end of the 1990s. The liberalization of the market, a substantial improvement in the profitability of projects due to changes in financial incentive schemes and a large consumer demand added to the implementation capacity for private producers and these changing conditions have been crucial for their growing entrance.

Two of the four entrepreneurial groups, i.e. energy distributors and small private investors, have dominated the wind power market in the Netherlands. Their development paths take the opposite direction, which can be explained at large by changes in the national public policy framework. Comparing energy distributors and small private investors on the basis of the total capacity installed one comes to the conclusion that while the contribution of small private investors has increased, the role of the electricity sector has decreased in importance. In 2002, small private investors even surpassed the electricity sector in terms of total capacity installed over the whole period. Energy distributors and small private investors not only show opposite development paths from a national level point of view, also regional differences in their performances have been considerable. These regional differences have not so much to do with national policies, but mainly with entrepreneurial characteristics and local social and institutional conditions as will be shown in the next section. The focus of central and provincial authorities on large-scale applications and the tendency to cooperate with energy distributors up to halfway the 1990s largely ignored the limited intrinsic motivation to invest in wind power by this entrepreneurial group. In general, wind power was not perceived by distributors to be a technical and economic attractive investment with future potential. Moreover, they were inexperienced in the planning of decentralized facilities. The implementation trajectories of these decentralized large-scale wind power facilities were characterized by lead times of an average of more than 6 years. In the same period, small private investors met with few problems at the operational level of implementation, e.g. the average period for authorization of solitary installations was 1.7 years for this type of investor.

[1] In 1991 the Ministry of Economic Affairs, the Ministry of Housing, Spatial Planning and the Environment and seven ‘wind abundant’ provinces signed an administrative agreement. The main purpose of this Governmental Agreement on Planning Problems Wind Energy (Bestuursovereenkomst Plaatsingsproblematiek Windturbines, BPW) was to create sufficient locations for wind turbines through targeted spatial planning policies of national and provincial governments. The BPW fit in with the Dutch culture of ‘gentlemen’s agreements’ without strict legal obligations. It contained a target for each province that had signed the covenant.

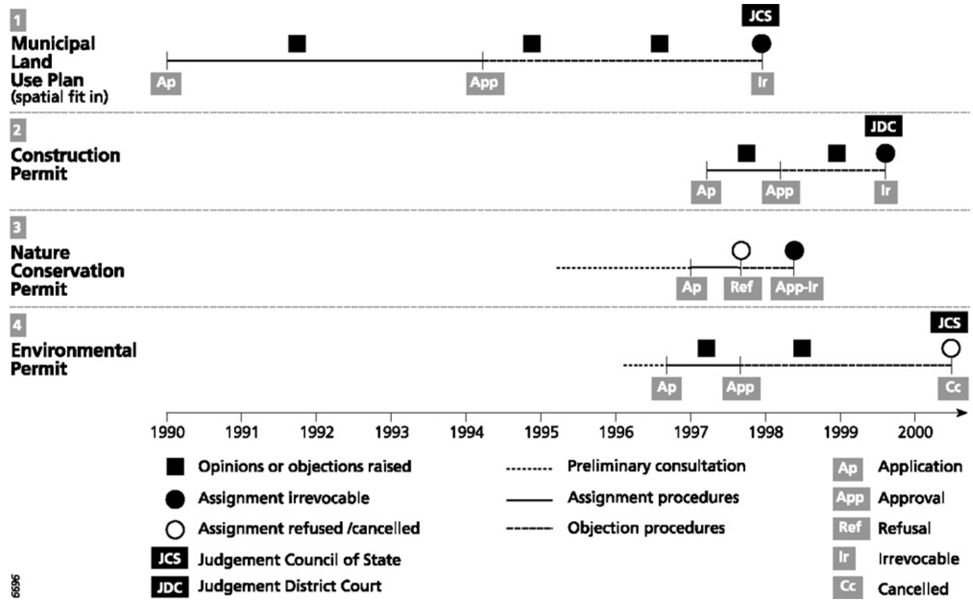


Fig. 2. Formal authorization trajectory of the Eemmeerdijk project [13, p. 73].

3. An inside look into a typical project for energy distributors[2]

At the end of the 1980s, the regional energy distributor approached the municipality to discuss the opportunities for large-scale wind power exploitation within the parish boundaries. The municipal authorities were principally in favor of wind energy and the Eemmeerdijk was designated. This positive attitude towards the large-scale Eemmeerdijk wind power project by the local authorities was an important pre-condition for the distributor to request for the revision of the municipal land use plan in 1990.

Profitable exploitation of the project turned out to be possible thanks to the assignment of national subsidies that together counted for 40% of the total investment costs. The Ministry of Economic Affairs (*Economische Zaken*) (EZ) and the Ministry of Housing, Spatial Planning and the Environment (*Volkshuisvesting, Ruimtelijke Ordening en Milieu*) (VROM) granted the subsidies, which was a clear sign of national governmental support. It seemed a perfect start for the formal authorization trajectory.

3.1. The authorization trajectory

Formally, the period required for authorization is 18 months to 2 years, excluding the time required for informal pre-deliberations and the terms required for appeal. Including the terms for appeal prolongs the formal period to more than 5 years.[3] In this case, it took the energy distributor 10 years to implement the project. Fig. 2 shows that the authorization trajectory consists of four different lines of decision-making: the revision of the Municipal Land Use Plan (MLUP), the assignment of the Nature Conservation Permit (NCP) and the assignment of the Environmental Permit (EP). Formal objections have been raised at 7 different moments divided over 3 different procedures by 12 different stakeholders on local, regional and national level. These objections considerably prolonged the total time required for authorization. Note that the Council of State cancelled the EP in June 2000, more than 1.5 years after the turbines were built. Ever since, the project operates illegally in formal legal terms.

Most of the administrative and public opponents used arguments concerning inconsistency of policy or incorrect implementation of legal norms. They shared for instance the opinion that the revision of the Municipal Land Use Plan was in direct conflict with the Regional Land Use Plan and with the National Structure Plan for Rural Areas, and they all expressed the opinion that the energy distributor should have performed an Environmental Impact Assessment.[4] Besides these arguments with respect to the management of procedures, arguments were raised with respect to specific interests.[5]

[2] Sections 3 and 4 are based on research conducted by Agterbosch as reported in her doctoral dissertation [13, pp. 71–8, 99–106].

[3] Peaks to more than 10 years are possible due to policy freedom at the local level. An example is the assignment of the Environmental Permit: the competent authority may decide to prolong the licensing term without limitation (within 8 weeks after application).

[4] Up to 1999, an EIA was required for all wind power projects comprising more than 20 turbines or in excess of 20 MW. The Eemmeerdijk project comprises 19 turbines.

[5] A municipality located nearby raised the argument that the project interfered with the 'historical atmosphere' of their fishing-village and the Provincial Environmental Association raised arguments related to the protection of water birds. Local public resistance had its origin in a limited number of active opponents all living nearby the project. These opponents used a wide array of arguments, such as increased risks for workers and cattle in the direct neighbourhood of the turbines, noise and shadow hindrance, landscape pollution and devaluation of neighbouring property.

3.2. Revision of the Municipal Land Use Plan

Initial support on both local and national governmental level implicated an increase in the implementation capacity for the regional energy distributor and was an important precondition for the distributor to request for the revision of the land use plan. During the revision process, however, this increase in implementation capacity was nullified by the emergence of administrative- and public resistance, which was caused by inconsistency in planning and a top-down planning approach.

Inconsistency in planning on provincial and municipal level[6] turned out to be food for objection for several administrative stakeholders on different levels of authority. Among the opponents were (regional departments of) the ministries that simultaneously supported the project through granting subsidies, which is a sign of internal fragmentation or dispersed decision-making powers and interests within both ministries.

In addition, the exclusive top-down decision-making strategy that the distributor and the municipality employed turned out to be counter productive. Municipal deliberation about the planning and licensing of the project was restricted to the energy distributor and a limited number of authorities with formal decision-making powers.

The draft version of the revised MLUP has to be available for public inspection for a period of 4 weeks. This period is closed with a statutory public information meeting. At this meeting, local farmers raised question about the planning of the project. It can be deduced quite explicit from the municipal explanations that the economic interests of the energy distributor had been leading in the allocation process. ‘The location is indeed not an official provincial preferential location, but it is, from an economic perspective, the most attainable location. Other locations have passed the table, but have not led to a new application by the energy distributor. Therefore, the municipality decided to continue with the Eemmeerdijk-location’.

Residents felt that the project solely served external private interests by trampling on the local common interests. They were not actively involved in the planning process, which strengthened their opinion that the local authorities passed over the interests of the local community. That is why they established a residents association and decided to use every opportunity to make protest, which lowered the implementation capacity for the energy distributor.

3.3. Assignment of the Nature Conservation Permit

The assignment of the Nature Conservation Permit (NCP) illustrates the influence of EU legislation and the lack of coordination of decision-making in different procedures (revision of the MLUP and the assignment of the NCP). Intertwined procedures characterized by dispersed decision-making powers are difficult to manage. The consequence in the Eemmeerdijk case was inconsistency of policy at ministerial level, which lowered the implementation capacity for the investor.

The difficulties that arose during the licensing procedure were not so much related to the complexity of the social network but more to the inability of the Ministry of Agriculture, Nature and Fisheries (ANF) to manage the permitting process. With the informal assurance that the project did not need a Nature Conservation Permit, ministerial policy praxis was diametrically opposed to the Dutch formal legal framework.[7] Moreover, this ministerial policy praxis was no longer feasible after the assignment of the Eemmeer Lake as special protection zone according to the EU-Birds Directive in 1995. The permit became required after all, which illustrates the influence of EU policy on national level conduct of legislation and therewith on the implementation capacity at project level.

The distributor applied for the permit and the Ministry assured that the assignment would not become a problem. This assurance became untenable however when objections raised against the permit by an environmental association turned out to be identical to objections raised by the Ministry of ANF against the revision of the land use plan. These latter objections were awaiting final judgment at the Council of State. With these latter objections, the Ministry indirectly subscribed to the objections raised by the environmental association. Consequently, the Ministry decided to refuse the permit. This decision evoked strong indignation both from the side of the distributor and the municipal authorities: ‘We had clear agreements about the Nature Conservation Permit, and we even had them in writing. . .and then a refusal!’[8]

Some months later, the Council of State declared the objections against the revision of the land use plan unfounded, which created a paradoxical and problematic administrative situation. Now, the refusal of the permit was not only at odds with informal assurances, but also with the judgment of the Council of State.

The NCP permit was refused, but the distributor disputed the validity of this decision. The Ministry, who felt uncomfortable with the situation, was receptive to renewed consultation. This informal consultation rather quickly led to a compromise: the permit became allocated on the condition that measures would be taken to prevent bird collisions.

3.4. Assignment of the environmental permit

The first deliberation between the energy distributor and the municipality about the Environmental Permit (EP) dates from august 1996. The municipality decided to allocate the permit in October 1997. This decision was cancelled by a final judgment

[6] The provincial target of 125 MW of wind power capacity in Flevoland was fully adopted in the Regional Land Use Plan by way of large-scale preferential locations in 1993. The Eemmeerdijk was not one of these preferential locations.

[7] Since 1984, jurisprudence on the application of the 1967 Nature Conservation Law provided an obligation to produce a permit for damaging actions within or in the direct neighbourhood of State Nature Reserves (the Eemmeer lake is a State Nature Reserve).

[8] J. Pater (Nuon), personal communication, 25 March 2002; D.J. Matthijsse (Civil servant Zeewolde), personal communication, 17 March 2002.

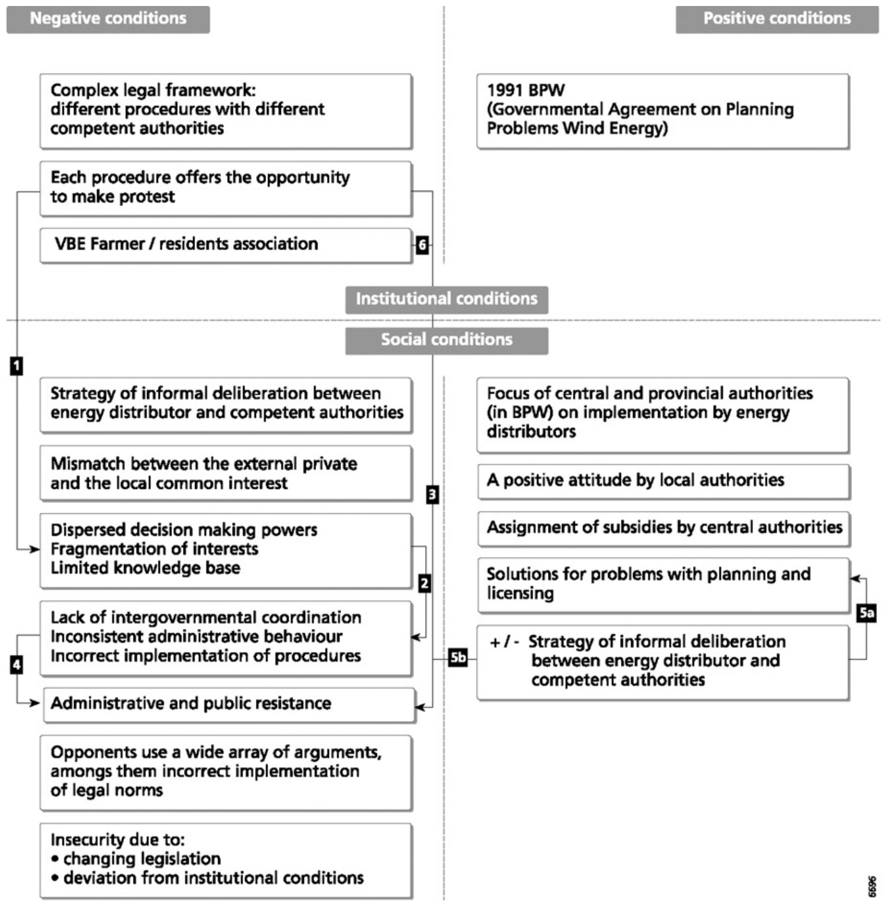


Fig. 3. Constituent local social and institutional conditions of the IC for energy distributors [13, p. 77]. (+/−) The strategy of informal deliberation between the energy distributor and the competent authorities is a social condition with both a positive and negative effect on the IC.

of the Council of State in June 2000. The municipal department on environmental issues had been incapable of delivering a permit of sufficient quality. The municipality department (the management of the procedure depended on one civil servant only) depended most on knowledge, expertise and suggestions delivered by the energy distributor. Attempts to obtain independent expertise on technical issues such as noise regulation were unsuccessful.[9] Frequent and personal contact between the distributor and the municipal department steered the decision-making process. The department and local politicians were favorably disposed towards the project and deemed an overstepping of the legal reference level for noise acceptable.

The residents association and a municipality located nearby objected to the assignment of the permit. They used the argument of incorrect implementation of noise regulation. This argument turned out to be the basis for annulment of the permit by the Council of State. At the moment of annulment, the wind power project was already operative for a period of 2 years.

3.5. Social and institutional conditions in the operational process of implementation

Fig. 3 provides an overview of the regional and local social and institutional conditions as constituent elements of the implementation capacity for energy distributors. The arrows in the figure illustrate interferences between social and institutional conditions and serve to clarify our findings on the interdependent nature and the relative importance of social and institutional conditions at the operational level of implementation.

The quality of planning and licensing is under pressure due to the complex legal framework that consists of different procedures with different competent authorities. Dispersed decision-making powers, fragmentation of interests between and within authorities and a limited knowledge base or administrative capacity bring about a lack in intergovernmental coordination; inconsistent administrative behavior and incorrect implementation of legal norms (see Fig. 3, arrows 1 and 2).

Each of the procedures offers the opportunity to make protest and administrative and public stakeholders use these opportunities. A wide array of arguments is used to oppose to a

[9] The responsible civil servant in Zeewolde consulted on a regular and informal base the municipal civil servant on environmental issues in a municipality located nearby. The civil servant also inquired about legal rules regarding the noise abatement zone 'Eemmeer-lake' at the provincial authorities in Utrecht. Also InfoMil, a governmental information centre for the environment, and the National Bureau Wind Energy were consulted.

project, among them arguments concerning inconsistency in policy or incorrect implementation of legal norms (see Fig. 3, arrow 3). Projects can be highly delayed by these arguments. Consequently, the authorization trajectory needs to be executed very conscientiously, which is a highly difficult job in view of the complex legal framework and the limited scope and structure of knowledge. Long lead times are the ultimate result.

The course of the authorization trajectory is insecure because of a lack in institutional stability and a policy practice that deviates from the formal legal framework. Long lead-times implicate that institutional conditions may change in the course of the authorization trajectory due to policymaking processes at different government levels. Changing legislation increases insecurity about the course of the procedures. Insecurity also results from the freedom of choice left by the formal legal framework and incorrect implementation of procedures and norms. The formal legal framework is only one of the regulating mechanisms that steer decisions. Interests and informal contacts are other regulating mechanisms, which contribute to a policy praxis that deviates from formal institutional conditions. In the project analyzed, administrative and social resistance could have been avoided if municipal and provincial planning had been in line with one another (see Fig. 3, arrow 4).

The energy distributor used a strategy of frequent and informal contact with the competent authorities to increase administrative commitment and to reduce insecurity about the course of procedures. Many problems occurred during the planning and permitting of this project. Most of these problems were solved by way of informal deliberation between the distributor and the competent authority (see Fig. 3, arrow 5a). Simultaneously, this top down decision-making strategy brought about a loss of supports from other (local) interests. Due to a lack of social acceptance final decision-making took place by the judiciary. The strategy of the distributor turned out to be counter productive (see Fig. 3, arrow 5b).

The mismatch between the local common interest and the external private or global environmental interest contributes to the risk of local social resistance. In the project analyzed, residents were not actively involved in planning and licensing. This strengthened their opinion that the municipal authorities passed over the interests of the local community. Residents felt that the project solely served external economic interests. The absence of local issues in planning and licensing contributed to fierce resistance from a limited number of active opponents who together raised a residents association to prevent implementation (see Fig. 3, arrow 6).

4. An inside look into the local performance of small private investors

The municipality Zeewolde consists of a small village and a large rural area with more than 300 farms, each 30–40 ha. By the end of 2003, almost 70% of the farmers owned a solitary turbine or formally applied for installing one. Looking at the number of turbines installed in Fig. 4, two successive phases can be observed. The first phase runs from 1989 to 1998 and is characterized by occasional implementations of solitary turbines by farmers. The second phase started in 1998 with the increase in applications for solitary installations. Those applications led, with some year delay, to a significant increase in both the number of turbines and the total capacity installed since the end of the 1990s.

The sharp increase in the number of farmer initiatives installed in Zeewolde is in line with improved national social and institutional conditions for this entrepreneurial group at the end of the 1990s. However, these improved national conditions were not utilized everywhere to the same degree: the installation of farmer initiatives did not increase at all in some provinces. It seems as if the improved conditions on national level were necessary but insufficient conditions for implementation. The increase in the number of farmer initiatives installed in Zeewolde was not only in accordance with changes in national social and institutional conditions but also with local social and institutional developments.

When the authorities in Zeewolde decided to start a process of policy making on the issue of wind energy implementation early 1996, they adopted a positive attitude towards solitary installations by farmers. The following reasons underlay this

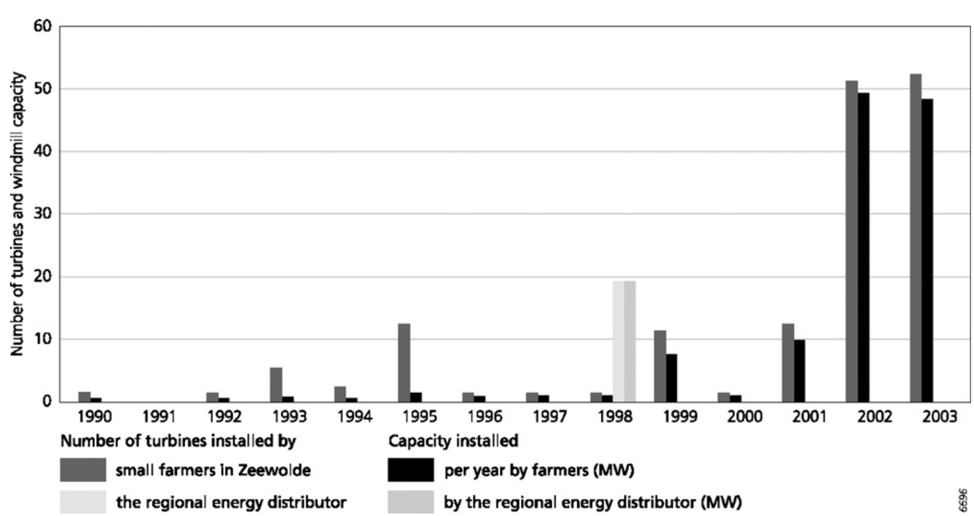


Fig. 4. Number of turbines and windmill capacity installed per year in Zeewolde [13, p. 100].

attitude. First, the idea of enabling every farmer to establish a wind turbine on its land was an indirect effect of the problems with the implementation of the large-scale Eemmeerdijk wind power project by the regional energy distributor. Social resistance against this project was fierce and the project was a breeding ground for conflict within the agrarian community. The agrarian community constitutes an important part of the entire community in Zeewolde. It therefore was important for local politicians to remain on good terms with this group and to search for a policy that served their interests.

Second, for most of the farmers the main motive for implementing a wind turbine was and is a financial one. Due to a favorable financial incentive system since the end of the 1990s farmers in Zeewolde expected to earn about €50.000 per year over the whole depreciation period on an investment of a million. 'We make more money with the sales of electricity than with farming nowadays[10] '[21]. A policy that would enable every farmer to establish a turbine on its land would serve the economic interests of the rural community. Knowing that the rural community in Zeewolde constitutes an important part of the entire community makes it easy to see that such a policy simultaneously served the private and the common interests.

4.1. The operational process of policy making

Support on local governmental level for the implementation of solitary turbines by farmers was an important social condition in the policy making process that led to the establishment of an explicit spatial policy at the end of 1999. As of that moment, local administrative authorities and local planning policy were directed at facilitating farmers. The policy making process had taken nearly 4 years. Informal deliberating between (1) the municipal authorities and farmers, (2) the municipal en provincial authorities and (3) the municipal authorities and a third market actor (a broadcasting station) had been required to finally establish the 'Windmill Axes Plan' (WAP). Some individual farmers and their representative associations were involved in all these deliberations.

Local farmers seriously recoiled from the first version of WAP. The turbines were planned in such a way that farmers were forced to lease additional land, which implicated a considerable increase in investment costs. Informal deliberation between the municipality, some individual farmers and their representative associations led to adjustment of the plan in accordance with the wishes of the farmers: the municipal authorities approved a new plan in June 1997.

Inconsistency between the adjusted plan and prospective provincial spatial policy on wind energy required renewed deliberation. Already since 1996, administrative discussions within the provincial authorities indicated a new policy direction: solitary turbines were not to be permitted. This ban on solitary turbines became formal provincial policy in 1999. WAP was not in line with this new provincial policy direction. It took 2 years of administrative deliberation and intensive lobbying by the municipal executive (including a role for some individual farmers and their representative associations) before the provincial council accepted the deviating municipal policy on wind energy in Zeewolde. Main reason for acceptance was the existing parcel division in the WAP-area: implementation of solitary turbines would lead to the creation of straight line-ups.[11] In 1999, the provincial council officially approved WAP and included it in a new Regional Land Use Plan.

Now that the province accepted the deviating municipal policy, the Dutch Network Broadcasting Station (Nozema), situated in the WAP-area, claimed that realization of WAP would lead to unacceptable disturbance. The municipality commissioned a study on this matter, which clarified that Nozema was right on this claim. Again, deliberation was required. This time, Nozema, municipal authorities and some individual farmers in the WAP-area were involved. The result was that in a circular area around the broadcasting station maximum mast heights became limited to 30 m.

4.2. Securing sites and permits

The positive local administrative attitude towards solitary installations by farmers was an essential social condition in the operational process of policy making that resulted in the establishment of the Windmill Axes Plan (WAP). This plan, in turn, was a positive institutional condition. These positive local conditions contributed to the implementation capacity for small private investors, but were insufficient conditions for rapid implementation. Implementation demands the building of another capacity, which presence is not self-evident. A municipality must be prepared to build administrative capacity to manage the different permitting procedures in a consistent way and to be able to assess wind power projects on legally fixed norms on complex matters, such as noise hindrance.

In Zeewolde, the establishment of an administrative 'Bureau Windmills' in 2000 contributed to the required administrative capacity. After the administrative problems encountered during the planning and permitting of the Eemmeerdijk wind power project of the regional energy distributor, awareness had grown about the administrative complexity of implementing wind turbines. Moreover, the increase in applications for solitary installations necessitated a professional management approach. The main reason for setting up Bureau Windmills was to provide for one local governmental counter for wind power entrepreneurs and a planning and permitting process of high quality. A second reason to establish Bureau Windmills was the

[10] This quotation comes from farmers owning windmills in a nearby municipality. These farmers constitute a collective of in total seven farmers. Together, they own a line-up of seven wind turbines, which have been operative since December 1999 [21].

[11] From a landscape point of view, the solitary turbines form a whole. However, applications were submitted for every turbine separately. Legally, the turbines were separate projects.

policy preference for implementation by farmers. Bureau Windmills intended to simplify the procedures for this entrepreneurial group. Direct consultation between farmer-investors and Bureau Windmills became standard. For instance, at the time (2001) the Provisions and Installations Environmental Management Decree came to replace the Environmental Permit for small-scale and solitary projects, Bureau Windmills created a standard form of application, which was actively spread amongst this entrepreneurial group. It led to an additional acceleration in solitary installations in 2002 and 2003. Due to Bureau Windmills, the scope and structure of knowledge both at the side of the municipality and the side of individual farmers increased.

Even though things seemed to go smoothly for small private investors in Zeewolde, there arose some complex bureaucratically constructions. The existence of the WAP and Bureau Windmills were important local conditions that added to the implementation capacity of this entrepreneurial group. We will show that the effect of these positive conditions depended to a large degree on the prevailing social setting.

Whereas the municipal executive established WAP in 1999, the city council never officially approved the plan. This implicated a rather strange administrative situation in which the provincial council agreed on a deviating municipal policy that never had been approved by the city council itself. Because WAP was never officially approved by the city council and the municipal land use plan was never officially revised, a separate exemption procedure was required for every single turbine. Within the legal framework of such an exemption procedure, approval of the provincial executive is required. In the matter of this approval, the regional inspector on spatial planning of the Ministry of Housing, Spatial Planning and Environment is legal ad- and supervisor. This advice turned out to be negative for every application for exemption because WAP deviated from national spatial policy guidelines on wind energy.[12] The provincial executive solved this problematic situation by structurally disregarding the negative advices, which was possible because the formal negative advises were always accompanied by a verbal agreement that the inspector would not start a formal juridical procedure.

This inconsistent administrative situation could have been ended by officially including WAP in the municipal land use plan. However, within the legal framework of revising a municipal land use plan, legal advice must be obtained from the same inspector on spatial planning. Of course, this advice was expected to be negative. This was one of the reasons for the municipality not to opt for this solution. Moreover, revision of the municipal land use plan would have implicated considerable delay for the individual farmer-investors and would have interfered with the municipal policy point of departure of facilitating farmers in establishing solitary turbines on their land.

A separate exemption procedure for every single turbine implicated a multitude in chances for objection. However, after running through the first 45 separate procedures for 45 solitary turbines, not one formal objection was raised. Municipal policy to implement WAP by way of separate exemption procedures was effective only because of the absence of local social resistance.

4.3. Collaborative arrangements

Collaborative arrangements among farmers and short communication lines to local authorities contributed to the implementation capacity for the farmers in Zeewolde. These positive social conditions added to the scope and structure of their knowledge and to their bargaining position on the liberalizing market.

The shared economic interest in wind power exploitation was the main driver for farmers to collaborate. Each road in the WAP-area corresponded to one joint farmers-initiative and usually, one or two farmers managed each farmer-initiative. During the planning and permitting procedures, contact with Bureau Windmills went by way of the farmer representatives and on aspects like the purchase of turbines, grid connection and the sale of the electricity, collaboration enabled to keep down turbine prices. Acting collectively was to the financial advantage of every farmer within the area.

The farmers united themselves in the regional umbrella association VWIJ—'Association of Wind Turbine Owners in the IJsselmeer area' which had been involved in the policy making process of WAP. Every farmer, installing a wind turbine in Zeewolde, was or became a member of this regional umbrella association. As of 2002, this uniform trend changed however: not every farmer automatically applied for membership any longer. This may be the result of the fact that things ran so easy, not only with regard to the permitting process but also with regard to the financing of projects.

Besides voluntary collaborative arrangements driven by shared economic interests, business arrangements with other categories of entrepreneurs played a role. In 1997, two independent wind power producers emerged on the wind power supply market in Zeewolde.[13] They have been associated with the implementation of half of the projects. The majority of these projects stayed in full ownership of the farmers themselves. There was no reason for sharing ownership with the independent wind power producers. In the period 1998–2002, almost all financial institutions offered farmers financial constructions to realize wind power projects without investing private capital, and therefore against very limited risks. Only the farmers that were situated in the circular area around the broadcasting station (where the mast height was limited to 30 meters) were inclined to give up ownership. 'Revenues decrease with decreasing mast height. The mast height restriction was reason for me to pass in ownership and accompanying risks to a professional wind power developer.

[12] D.J. Matthijse (Civil servant municipality Zeewolde), personal communication, 27 March 2002, Keestra (Civil servant Province of Flevoland), personal communication, 26 January 2004.

[13] De Wolff Nederland Windenergie BV and Groenraedt BV.

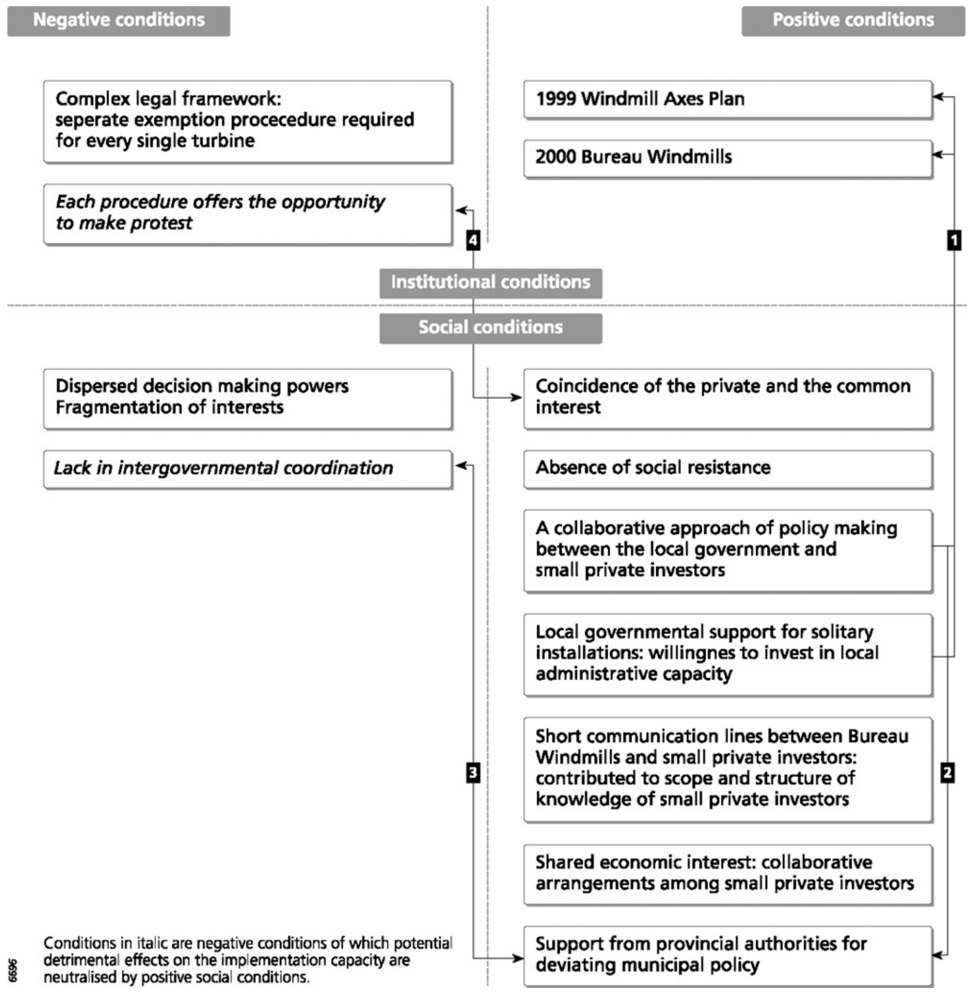


Fig. 5. Constituent local social and institutional conditions of the IC for small private investors in Zeewolde [13, p. 106].

Those developers exploit the turbines on a different basis. They are able to make full use of all available fiscal incentive schemes, which are not much use for farmers[14]'. Farmers followed an economic rationality: sharing ownership with other entrepreneurial groups is purely based on economic arguments.

4.4. Constituent social and institutional conditions of the implementation capacity

Fig. 5 provides an overview of local social and institutional conditions as constituent elements of the implementation capacity for small private investors in the municipality Zeewolde. Looking at this figure, we observe that many local social conditions contributed to the implementation capacity for this entrepreneurial group. The positive local administrative attitude towards solitary installations and the collaborative approach of policymaking are important examples. These social conditions were essential in the operational process of policy making that resulted in the establishment of an explicit spatial policy on wind energy: the Windmill Axes Plan (WAP) (Fig. 5, arrow 1). The operational process of policy making took several years and involved informal deliberation between various stakeholders among them local farmers and their representative associations.

Although the positive local administrative attitude, the collaborative approach of planning and the resulting Windmill Axes Plan were important local conditions that contributed to the implementation capacity for small private investors, they were in themselves insufficient conditions for rapid implementation. Implementation demanded the fulfillment of another condition: local administrative capacity to manage the different permitting procedures in a consistent way. Bureau Windmills was raised to fulfill this demand.

Bureau Windmills enabled short communication lines between farmer-investors and local administrative authorities. These short communication lines, combined with the establishment of collaborative arrangements among farmers additionally contributed to the implementation capacity for this entrepreneurial group. These social relations like authority relations and relations of trust, facilitated coordinated actions, like the joint lobby of the municipal authorities and farmers to induce the provincial authorities to accept WAP (Fig. 5, arrow

[14] J. Middelkamp (Farmer and wind turbine owner), personal communication, 5 November 2003.

2). Moreover, collaborative relations added to the scope and structure of knowledge and to the bargaining position of the small private investors on the liberalizing market.

The analysis furthermore shows that the formal legal framework is only one of the regulating mechanisms that steer developments; interests and informal contacts are evenly important. An example is the implementation of the WAP on an ad hoc basis, and the role in this of the regional Inspector of the ministry of Housing, Spatial Planning and the Environment. It illustrates the importance of a social setting for the exact working out of institutional conditions. The lack of formal intergovernmental coordination (WAP deviated from national spatial policy guidelines) was not a problem because of provincial governmental support, which in turn was a consequence of intensive municipal lobbying (Fig. 5, arrows 2 and 3). Implementation of WAP on an ad hoc basis implicated separate exemption procedures for every single turbine, which is a negative institutional condition because every procedure offers the opportunity to make protest. However, this institutional condition was not a problem because of the absence of social resistance (Fig. 5, arrows 4). It once again illustrates that an institutional condition or structure is not a bottleneck in itself. It is the way stakeholders deal with this institutional structure that clarifies implementation.

5. Reflection on the main findings

The collaborative approach of policy making between the Ministry of Economic Affairs and energy distributors at the beginning of the 1990s brought about national strategic energy policies that contributed to the implementation capacity for this entrepreneurial group. Central and provincial authorities focused on large-scale applications and tended to cooperate with energy distributors. These conditions led to a rise in large-scale wind power initiatives, but were insufficient for rapid implementation. Energy distributors were inexperienced in the planning of decentralized facilities and often used a top down planning approach ignoring public discussions on the local governmental level. These discussions concern aspects like landscape value, beliefs about interference such as noise hindrance and financial benefit. Ignoring these local interests created conflicts at community level. A clear national-local divide can be observed: local conflicts were at odds with socio-political acceptance and the corresponding public policy framework at the level of central and provincial authorities.

The inside look into a typical project for energy distributors illustrates that conflicts at community level can be explained by a variety of institutional regulatory and social problems at the local level, in which the importance of social conditions prevails. The formal legal framework that governs the planning and permitting of these projects is a dynamic constellation of interdependent institutional conditions that offers chances and bottlenecks for project realization. The authorization trajectory is not a blueprint of this formal institutional regulatory framework. Dispersed decision-making powers, fragmentation of interests within and between administrative stakeholders and a limited knowledge base contribute to a policy practice that deviates from the formal regulatory framework. These social conditions can neutralize the effect of the national public policy framework and increase the insecurity about the course of the procedures. To reduce this insecurity, most energy distributors used a strategy of frequent and informal contact with the competent authorities. Simultaneously, such a strategy of informal and closed top-down decision-making runs the risk of loosing support from other (local) interests and increases the chance of social resistance. Local residents are inclined to oppose to a project when they feel that decision-making serves the external economic interests or the global environmental interests by ignoring local aspects such as hindrance and risks for citizens, the scenic value of the landscape and nature protection. These local residents are able to delay a project considerably.

The inside look into the local performance of small private investors illustrates the importance of local capacity building. Local capacity building is a temporary self-strengthening process in which the influence of social conditions prevails. Local social relations like authority relations and relations of trust, facilitate coordinated actions, add to the scope and structure of knowledge and to the bargaining position of small private investors on the liberalizing market. Social coherence at local governmental level, with the shared economic interest being the main driver, contributed to the implementation capacity of small private investors in Zeewolde. Negative institutional conditions and problems due to the complex legal framework were neutralized by processes of open deliberation between various local stakeholders, short communication lines and collaborative arrangements driven by a shared economic interest. These social conditions added to a process of local capacity building for implementation by small private investors, which however is not representative for all Dutch provinces over the last 15 years. Less successful developments in some provinces can also be explained by regional and local socio political developments, which emphasize the importance of regional and local social conditions and corresponding local public policies for the developments in implementation capacity [13].

Both cases illustrate that the formal institutional framework (formal rules, procedures and instruments) is neutral in a certain sense. Social conditions – management styles, interests and informal contacts – put meaning in this framework. It was shown that formal positive policy can be neutralized by negative local social conditions (cf. NIMBY syndrome), but more interestingly, also that *positive* local social conditions can compensate for a *negative* public policy framework. The way stakeholders deal with the prevailing institutional structure clarifies social acceptance and therewith implementation. Perceived fairness of the planning process and homogeneity within the community with regard to potential benefits are particularly important factors. The building of a network of administrative and public support and collaborative arrangements, the ability of voice to be heard by local stakeholders and an adequate dissemination of information are important social conditions that add to a sense of procedural justice. Our study

furthermore indicates that a shared economic interest (contributing to distributive justice) is an important driving force for these social conditions to occur (for the required local social and political capacity building). Procedural and distributive justice combined is a strong forecast for community acceptance. Key to wind energy policy formation therefore is to create policy frameworks that tend to foster both types of justice at the local level.

With regard to the three different explanations for the so called 'social gap': the NIMBY phenomenon, the 'democratic deficit' and the 'qualified support for wind power', we notice that these explanations are not mutually exclusive and – more important – do not provide a proper picture of the complex and interactive nature of the formal public policy framework and social conditions at the operational level of implementation. Our case studies illustrate that to really understand why community acceptance comes about, a profound analysis of the dynamic interaction between the formal public policy framework and social conditions at the operational level of implementation is required. For such an analysis, our conceptual framework and the concept of implementation capacity (IC) [20] turn out to be useful.

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